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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,044	07/25/2003	Phillip Andrew Armstrong	06371 USA	3772
23543	7590	05/09/2005	EXAMINER	
AIR PRODUCTS AND CHEMICALS, INC. PATENT DEPARTMENT 7201 HAMILTON BOULEVARD ALLENTHON, PA 181951501			BUSHEY, CHARLES S	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/627,044	ARMSTRONG ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Scott Bushey	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 25 March 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,15 and 16 is/are withdrawn from consideration.
- 5) Claim(s) 11 and 12 is/are allowed.
- 6) Claim(s) 1-3,6-10,13,14,17,19 and 21 is/are rejected.
- 7) Claim(s) 18 and 20 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1-21-05</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Election/Restrictions***

1. This application contains claims 15 and 16 drawn to an invention nonelected with traverse in the paper submitted on October 5, 2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 8-10, 13, 14, 17, and 21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Alleaume et al (Figs. 2-5; col. 3, lines 48-60; col. 4, lines 61-62).

Applicant should note that the wiper rings (28,30), in each of the embodiments of Figures 4 and 5 of the reference, each perform collecting liquid at the wall, and transmitting the liquid toward the central longitudinal axis of the column. It should be noted that the element shown in Figures 1-3 of the reference performs the dispensing of the liquid through bottom perforations

(15) of troughs formed by open top support beams, which support the layer of overlying structured packing (26) on the tops (14) of beam walls (11). Applicant must recognize that the phrase "a substantial distance" across the cross-sectional area of the exchange column does not require a particular threshold of distance, and in view of the fact that the claims must be given their broadest reasonable interpretation, the reference must be considered to anticipate the claimed invention with respect thereto.

With respect to the language added to the claims pertaining to the wall collector not collecting a substantial portion of the liquid descending within the column at a distance from the inner wall of the column, it is quite clear from the figures of the reference, that the wall collectors (28,30) end a substantial distance from the center of the column and therefore a substantial portion of the liquid descending through the column will not be collected thereby.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-3, 6, 7, 13, 14, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meier et al.

Meier et al (Figs. 1 and 2; col. 3, lines 56-60) substantially disclose applicant's invention as recited by instant claims 1-3, 6, 7, 13, 14, and 21, except for a specific recitation that the packing is spaced from the column wall and how the wall wiper (9) is attached to the column wall, i.e., fixed or movable. Wherein it is well known within the art that wall effect maldistribution of liquid within a column having structural packing is a common problem, it would have been obvious to an artisan at the time of the invention, to space the packing from the wall, to minimize short circuiting of the liquid along the wall of the column. Furthermore, it is also well known within the art to either fix or allow the wiper to float within the column, it would have been obvious to an artisan at the time of the invention, to choose either means for locating the wall wiper at the desired level within the column. Applicant should note Harper '150, which teaches sealing a wiper to the column wall without fixedly attaching it thereto.

With respect to the language added to the claims pertaining to the wall collector not collecting a substantial portion of the liquid descending within the column at a distance from the inner wall of the column, it is quite clear from the figures of the reference, that the wall collector (9) ends a substantial distance from the center of the column and therefore a substantial portion of the liquid descending through the column will not be collected thereby.

8. Claims 6, 7, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alleaume et al taken together with Harper '150.

Alleaume et al (Figs. 2-5) as applied above substantially disclose applicant's invention as recited by instant claims 6, 7, and 19, except for a specific recitation as to how the wall wiper means are attached to the column wall. The reference does appear to indicate that the wipers are seal welded to the column wall (note col. 3, lines 24-26). In any event, fixedly welding wiper means to a column wall is well known within the art.

Harper '150 teaches that it is also conventional within the art to attach wipers within a column in a movable manner. It would have been obvious to an artisan at the time of the invention, to attach wiper means to the column wall in either a fixed or movable manner, in view of the teachings by the prior art references, such attachments allowing for either a strong fixed wiper, or a flexible movable wiper, as required by the operational parameters of the process being practiced.

***Allowable Subject Matter***

9. Claims 11 and 12 are allowed. Applicant should note that the prior art of record fails to disclose or suggest the apparatus as recited by instant claims 11 and 12, wherein the wall flow collector includes a column wall wiper provided above the open top support beam that transports the liquid collected by the wall flow collector across the cross-sectional area of the column toward the longitudinal axis of the column, and dispenses the collected liquid through holes in the bottom of the support beam to the next lower structural packing layer, the beam supporting the structural packing layer immediately thereabove the beam.

10. Claims 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims. Claims 18 and 20 would be allowable for the same reasons as set forth in paragraph 9 above.

***Response to Arguments***

11. Applicant's arguments with respect to claims 2, 9, 10, 17, 19, and 21 have been considered but are moot in view of the new grounds of rejection. With respect to instant claims 17, 19, and 21, such were newly added and thus their addition necessitated the new grounds of rejection thereof. With respect to instant claim 2, applicant's amendments, as well as the arguments directed to the rejection over the Meier et al reference necessitated the new ground of rejection thereof as a backup position. With respect to instant claims 9 and 10, the amendments to the claims necessitated the new grounds of rejection, since Harper et al '913, as previously applied thereto, was not considered the best basis for rejection since the liquid collection means of Harper et al '913 clearly collects all of the descending liquid within the column.

12. Applicant's arguments filed March 25, 2005 have been fully considered but they are not persuasive. With respect to applicant's arguments as they pertain to the rejections based upon Alleaume et al, such have been extensively addressed within the rejection statements above. As a point of further emphasis it is noted that applicant's recitation within the claims that the wall collector collects a first portion of the liquid descending near the column wall without collecting a substantial portion of a second portion of liquid descending within the column away from the wall does not limit the claims in the manner applicant appears to believe. Clearly, the claims still utilize relative terms such as "near" and "away" when describing the collected or uncollected portions of liquid. Such terms do not clearly define the metes and bounds of the collection. Further, applicant speaks of first and second portions of liquid descending through the column,

as if the claim must now be read to require only a first and a second portion of descending liquid. What happens to applicant's position when the claims are given there broadest reasonable interpretation that would include an infinite number of liquid portions descending through the column, some being near to, closer to, further from, spaced from or just somewhere within the column?

***Conclusion***

13. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is (571) 272-1153. The examiner can normally be reached on Monday-Thursday 6:30AM-5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott Bushey  
Primary Examiner  
Art Unit 1724

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